CUSTOMER EQUITY: MAKING MARKETING STRATEGY FINANCIALLY ACCOUNTABLE

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Abstract

The article presents an overview of the literature on customer equity and how customer equity provides an opportunity for marketers to make marketing strategy financially accountable. Traditionally, Return on Investment (ROI) models have been used to evaluate the financial expenditures required by the strategies as well as the financial returns gained by them. However in addition to requiring lengthy longitudinal data, these models also have the disadvantage of not evaluating the effect of the strategies on a firm's customer equity. The dominance of customer-centered thinking over product-centered thinking calls for a shift from product-based strategies to customer-based strategies. Hence, it is important to evaluate a firm's marketing strategies in terms of the drivers of its customer equity. The article summarizes a unified strategic framework that enables competing marketing strategy options to be traded off on the basis of projected financial return, which is operationalized as the change in a firm's customer equity relative to the incremental expenditure necessary to produce the change.

Keywords:

1. Introduction

The long-term value of a firm is largely determined by the value of the company's customer relationships, which result in the firm's 'customer equity' (Blattberg and Deighton 1996), defined by Rust, Lemon and Zeithaml (2000, p.4) as: "the total of the discounted lifetime values of all of its customers." In other words, the authors view the value of the customer not only in terms of that customer's current profitability, but also with respect to the net discounted contribution stream that the firm will realize from the customer over time (Hogan, Lemon and Libai, 2002). Summing these values up over all the firm's customers gives the total value of the customers of the firm, which is also known as its customer equity.

The belief that marketing should be

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concerned with the profitability of individual customers is not new. Sevin (1965) proposed a method to compute a single customer's profitability by allocating functional groups to each customer and subtracting them from each customer's yearly revenue. Lately, this topic has been taken up with renewed vigor as advances in point of purchase data collection and database technologies have made it possible to capture and analyze relevant information about the customers.

Several broad interrelated trends currently shaping economic change in every developed economy make it inevitable that management will shift its focus from brand equity to customer equity. This shift is guided by the following trends:

1. The Shift from Goods to Services: The underlying basis for all of the trends is the dramatic long-term shift of every developed economy from goods to services (Rust, Lemon and Zeithaml, 2000; Shugan, 1993)

2. The Shift from Transactions to Relationships: A service economy facilitates a shift from a focus on customer transactions to a focus on long-term one to one customer relationships (Peppers and Rogers, 1993, 2001).

3. The Shift from Customer Attraction to Customer Relationship: For the firm, keeping or retaining customers is tantamount to its success. While attracting customers is still important, customer retention is crucial to the firm's long-term survival.

4. The Shift from Product Focus to Customer Focus: In general an increasing emphasis on customers and relationship management coincides with a decreasing emphasis on products.

Hence, it is easy to see that, for most firms, customer equity is bound to be the most important component of the value of the firm. Thus, understanding how to drive customer equity is central to the decision making of any firm and formulating a procedure to achieve this can give the firm an important competitive advantage.

Top managers are constantly faced with the problem of how to trade off competing strategic marketing initiatives. The marketing initiatives lead to changes in the basic drivers of customer equity, which in turn leads to a change in customer equity. Choice of the optimal marketing initiative hence depends on the projected return from each of the competing strategic initiatives. Rust, Lemon and Zeithaml (2004) present a unified strategic framework that enables competing marketing strategy options to be traded off on the basis of projected financial return, which is operationalized as the change in a firm's customer equity relative to the incremental expenditure necessary to produce the change.

2. Foundations of Customer Equity

2.1 Origins of Customer Equity

The customer equity approach to marketing management finds its origins in several overlapping research streams including direct marketing, service quality, relationship marketing and brand equity. Individually none of these areas provide a complete solution to challenges facing firms today; however in unison they provide a more effective approach to managing customer assets. In this section, we aim to provide a brief explanation of how these streams contribute towards the study of customer equity (Hogan, Lemon and Rust, 2002):

Direct Marketing: The direct marketing literature has made several contributions to our understanding of customer equity. Direct marketing was the first area of marketing to capture individual purchase information in customer information files. Direct marketers also initiated the use of statistical techniques for predicting customer response to marketing communications and the development of many segmentation techniques like automatic interaction detection (AID) (Sonquist, 1970) and chi-square automatic interaction detection (CHAID) (Hughes, 2000; Newell, 1997; Kass, 1976), the recency-frequency-monetary value model (RFM) (for a review, Roberts and Berger, 1989) and more recently hierarchical Bayes personalization approaches (e.g., Rust and Verhoef, 2004). Finally direct marketers were the first to use customer lifetime value assessments as a basis for marketing strategy.

Service Quality Literature: The research on customer satisfaction and service quality has made a substantial contribution to our understanding of the relationship between service quality and customer profitability (Rust, Zahorik and Kenningham, 1996; Rust, Zahorik and Kenningham, 1995; Anderson, Fornell and Lehmann, 1994). In addition this research stream has identified causal linkages between the antecedents of service quality and components of customer lifetime value like retention (Rust, Inman, Jia and Zahorik, 1999; Bolton, 1998). Thus, a major contribution of the service quality literature has been to explore how the dimensions of a key marketing function can contribute to the value of a customer.

Relationship Marketing: The relationship marketing literature was among the first to focus on customer relationships as strategic assets of the firm (Hunt and Morgan, 1995; Jackson, 1985). Research in this area has also specified processes of relationship development and identified key elements for developing and sustaining long-term relationships. In a few cases, this stream has moved beyond the interpersonal model (trust, commitment etc.), to connect these variables to the profitability of the firm (Brodie, Glynn and Van Durme, 2002; Gummeson, 1999).

Brand Equity: The brand equity literature has also substantially contributed to the customer equity approach. Brand equity is most important in industries that sell 'low involvement goods,' i.e., products that are frequently purchased, are relatively low priced and products that consumers do not want to spend too much time thinking about. An examination of the antecedents and consequences of brand equity has provided substantial insights into the process by which consumers develop relationships with firms (e.g., Keller 1998). The main drivers of brand equity: brand awareness, attitude towards the brand and brand ethics (Aaker 1991, Keller 1993, 1998), are linked to the relationship of the consumer with the product and hence provide useful insights to better understand the firm's customer equity.

2.2 The Drivers of Customer Equity

Conventionally, firms evaluated the

profitability of an organization in terms of product profitability. Thus, the activities and decisions of the firms were organized around products and their functions. However, in today's business environment, sales success results from relationships more than from individual transactions. To ensure profitability, a good or service must not only be purchased by a number of consumers, it must be repurchased repeatedly. Consumers will re-purchase a product only if it satisfies them; therefore, the key challenge to firms is satisfying the customer.

Thus the customer forms the key challenge to a firm's profitability. To attract and satisfy customers and to prevent the defection of customers, it is essential for firms to adopt a customer-centric focus. The customer-centric view leads to the concept of customer equity. A firm is only as good as the customer's assessment and expectation of the firm. Customer equity is based on three actionable drivers- value equity, brand equity and relationship equity. Each of these drivers of customer equity consists of actions that a firm may take to fortify the value of its customers. The drivers and their relationships with customer equity are illustrated in figure 1 (adapted from Rust, Lemon and Zeithaml, 2000).

Value equity focuses on a customer's objective assessment of the utility of the brand. It considers how the consumer evaluates quality, attractiveness of the product, price and the convenience of doing business with the firm. Brand equity is that portion of customer equity attributable to a customer's subjective perception of the brand, above and beyond its value equity. Among other things, it deals with the effect of company communication on the

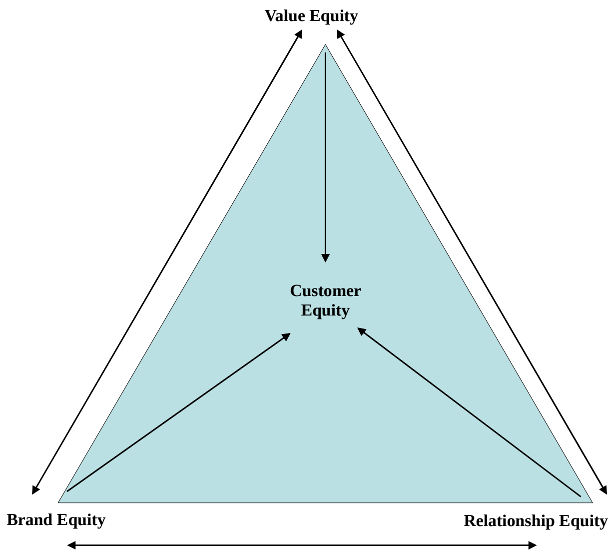

Figure 1 Figure 1: Drivers of Customer Equity

customer and the emotions associated by the customer with the brand. Relationship equity is the customer's inclination to adhere to the brand, above and beyond the customer's objective and subjective assessments of the brand, based on relationship-building efforts that increase switching costs. Note that in all of the drivers of customer equity there exists a unifying theme of emphasis on the customer. This customer-centric approach forms the basis of customer equity. Customer equity implies the segmentation of customers and deduction of the key drivers of customer equity for each customer segment. Customer equity is dynamic in nature and therefore the key drivers of customer equity for a firm or industry may change over time. The customer equity framework also possesses the proclivity to direct a firm's resources so as to maximize their impact.

2.2.1 Value Equity

Value Equity is the customer's objective assessment of the utility of a brand based on perceptions of what is given up for what is received. Value equity emphasizes the rational and objective aspects of the firm's offerings. Customers tend to define value as a low price, their specific needs in a product, the quality received for the price paid, and what the customer receives for what is given up, including time and effort. Value is thus the foundation of the customer's relationship with the firm. Value is strengthened as actual goods and service consumption experiences meet or exceed the customer's expectations. However the opposite is also true, i.e., each time the product disappoints there is a risk that the customer will become disconnected. There are several paths that firms can go down to increase value equity. For example, value can be increased by giving the customers more of what they want and also by reducing what the customer has to give up in order to receive the desired product. Reducing the effort involved in the task can also lead to an improvement in value. For example the Internet can make shopping less effortful, and thereby increase the value the customer gets from shopping. Value equity is most important when there are or can be differences between competing products, purchases with complex decision processes, business-to-business purchases, innovative products and services and firms wanting to recycle products in the maturity stage of the life cycle. The main drivers of value equity are quality (of the physical product if one exists or the service product, service delivery and service environment, Rust, Zahorik and Kenningham, 1995), price (examples include everyday low prices, discounts and sales, which are preferred when products are transient in nature and payment plans) and convenience, (examples include the location of retail outlets, ease of use and availability).

2.2.2 Brand Equity

The study of brand equity is not new to marketing (e.g., Erdem and Swait, 1998; Keller, 1993; Aaker, 1991). However, only recently has brand equity been studied in the context of the customer equity framework. Brand equity is that portion of customer equity attributable to the customer's perceptions of the brand. It is defined as the customer's subjective and intangible assessment of the brand, above and beyond its objectively perceived value. This evaluation is shaped by the firm's marketing strategies and tactics and is influenced by the customer through life experiences and associations with the brand. The brand acts as a magnet that attracts new customers to the firm. By building brand awareness and recognition, the firm can find and attract new potential customers. The brand also acts as a reminder to customers. For current customers, the brand serves to remind customers about the firm's products and services, and to ensure that a firm's customers continue to think about the firm. The brand can also act as the customer's emotional tie to the firm, i.e., customers who have a strong relationship with a brand may closely identify with the brand. Brand equity thus represents the extent to which the firm captures the 'heart' of the consumer. Brand equity matters most for low involvement purchases, when the product is highly visible to others, when experiences associated with the product can be passed from one individual or generation to the next and when it is difficult to evaluate the quality of a product or service prior to consumption. The main drivers of brand equity are:

- ➢ Customer brand awareness (brand communication to current and potential customers), which is dependent on the communications mix (advertising, promotions etc.), the media (television, web, radio, direct mail etc.) and the message (what the firm wants to convey).
- ➢ Customers' attitude towards the brand, which depends on the communication message (mainly the ongoing message), special events, brand extensions, brand partners and product placement and celebrity endorsements.
- ➢ Customer perceptions of brand ethics, which are influenced by community events, a customer friendly privacy policy, environmental record, hiring practices and guarantees.

2.2.3 Relationship Equity

Relationship Equity is the tendency of the customer to stick with the brand, above and beyond the customer's objective and subjective assessments of the brand, based on corporate efforts to build and reinforce the relationship. It focuses on switching costs tying the customer to the firm, based upon the actions taken by the firm and by the customer to establish, build and maintain a relationship. Relationship programs should maximize the likelihood that the customer returns for future purchases, maximize the size of the future purchases and maximize the likelihood that the customer will purchase from a competitor. Relationship programs can take many forms. For example the firm can provide additional benefits that make it more costly for the customer to switch to a competitor (e.g., by allowing the consumer to customize the product offerings etc.), reward behaviors that enhance the retention connection (reward programs, reward points per purchase etc.) and also by strengthening the relationship with the customer through emotional ties. Relationship equity matters most when the benefits the customer associates with the loyalty program are significantly greater than the actual benefits, when the community associated with the product or service is as important as the product or service, when the learning relationship created between the firm and the customer becomes as important as the provision of the product or service and when customer action is required to discontinue the service. The main drivers of customer equity are loyalty programs (frequent purchase/reward programs), special recognition and treatment programs, affinity programs (emotional connection), community programs and knowledge building programs (learning relationships or structural bonds).

2.3 Models of Customer Equity

Several models of customer equity exist in marketing literature (Rust, Lemon and Zeithaml, 2004; Bolton, Lemon and Verhoef, 2004; Kamakura et al., 2002; Blattberg, Getz and Thomas, 2001; Reinartz and Kumar, 2000; Berger and Nasr, 1998 and Blattberg and Deighton, 1996). Because customer equity is the total of the discounted lifetime values of all of the firm's customers, modeling customer equity involves understanding how customer lifetime values can be accurately estimated. One of the most significant impediments to measuring customer equity accurately is the fact that consumers switch between brands, and this switching make measuring customer lifetime values very complicated. Switchers were first classified by Jackson (1985) into two categories: 'always a share' and 'lost for good'. Always a share buyers kept purchasing from the focal firm or the other without ever sticking to a firm (i.e. they switch from one firm to another without ever sticking to a particular firm), while lost for good buyers either stuck to the focal firm or were lost to the competitor. Dwyer (1989) adapted this nomenclature to a direct marketing framework where lost for good buyers were reclassified into a consumer retention model and always a share were reclassified into a consumer migration model. Berger and Nasr (1998) use the Dwyer (1989) classification to develop models for customer lifetime value. Pfeiffer and Carraway (2000) also describe a method to study more complex firm – customer relationships, that can incorporate switching behavior, defections and retentions, using Markov Chain Models. The authors argue that their method is most useful when no algebraic solutions exist to conventional methods of modeling customer lifetime values. Rust, Lemon and Zeithaml (2000) posit that an accurate calculation of the customer's lifetime value requires knowledge of the following inputs:

- The time period chosen for analysis (e.g. one month, one year etc.).
- The company's discount rate (e.g. cost of capital).
- The company's planning horizon (e.g. how many periods).
- The customer's frequency of purchase in each period in each product category.
- The average contribution from a purchase of the focal brand.
- The customer's most recent brand chosen
- The customer's estimated probabilities of choosing each brand.

One can construct a switching matrix that incorporates information from the most recent brand chosen, and the estimated probabilities of choosing each brand the next time. Each element of this matrix represents a possible state, i.e. whether a customer chooses to stay with the firm or switch to a competing firm, whose brand is in the same choice set. In the switching matrix, each possible state has a probability that may be calculated, if the brand last chosen by the consumer was known. Thus, we can derive the estimated percentage of business from the consumer for the brands in the choice set (Peppers and Roger, 1997). Once we have the brand's projected percentage of business from this customer, it is possible to estimate the lifetime value of the customer. A more detailed representation of this procedure is provided by Rust, Lemon and Zeithaml (2004).

Thus the modeling of customer lifetime value requires modeling the switching matrix for each individual customer. Once the lifetime value is calculated for each customer, the researcher can evaluate the customer equity by multiplying the mean customer lifetime value across the firm's customers by the net current and potential population of customers in the market (i.e., the total number of customers across all brands). Rust, Lemon and Zeithaml (2004) advance the modeling of customer equity further by incorporating brand switching at the customer level. This model is summarized in the subsequent sections.

3. Customer Equity and Brand Management

Most companies today are geared toward embellishing their brands based on the assumption that sales will follow. To be successful over time, however, firms must focus on maximizing customer lifetime value. In other words, firms must focus on customer equity and the relationship rather than just brand equity and the transaction. Although brand equity is an important component of customer equity, concentrating on brand equity alone is not necessarily acting in the best interests of customer equity. A salient characteristic of a brand is that it is highly individualized in nature. A customer might grow tired of a brand, or more captivated, independent of the response of other customers. Therefore assigning an average value to brand equity is dangerous because it obscures the fact that brand equity is actually customer-specific, and varies among customers.

3.1Customer-Centric Brand Management

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3.1 Customer-Centric Brand Management

Rust, Zeithaml and Lemon (2004) provide the following seven directives that can help firms better manage their brands:

- Brand decisions should be subordinate to decisions about customer relationships: This emphasizes the importance of reinforcing the role of the customer segment manager and of providing resources to this role, rather than channeling them to additional brand managers. It might be optimal to go beyond segments and assign managerial responsibility to certain customers, if they are big and important enough.
- Brands should be built around customer segments, not the other way around: For example Unilever markets an extensive portfolio of brands, each targeted to a different psychographic or demographic segment.
- Make brands as specialized as possible: If the customer is fundamental to the marketing strategy of the brand, then the purpose of a brand should be to satisfy as small a segment as is economically feasible.
- Brand extensions should be based on customer need, not component similarities: Brand extensions are more likely to be successful if customers are alike, even if the products are not (Virgin has music stores, soft drinks, mobile phones and airlines). However best results are achieved when both products and customers are alike (e.g. moving from credit cards to debit cards).
- Develop the mentality to allow customers to switch to other brands in the company: If a customer is better suited to another brand in the company's portfolio, then it is not practical to spend disproportionately more in order to hold on to a brand's customer relationship.
- Be pragmatic: Occasionally customers may perceive certain brands as unattractive. Reversing this perception might prove too expensive. Hence, in such cases it is better to retire the ineffective brand. While brands should never be scrapped frivolously, they should not be retained based on emotional owners or aggressive managers. (e.g., GM pulled its electric car from the market inspite of protests from owners, as it was no longer financially feasible to support the electric car program, and also because a more financially sound alternative, the hybrid model, had gained prominence).
- Change how brand equity is quantified: This deals with understanding what drives customer equity and to what extent brand equity is a driver of customer's buying decisions. Measuring brand equity then involves an analysis of the drivers of brand equity, mentioned previously. Most importantly, brand equity measurement involves the calculation of brand values associated

with customers on an individual basis and summing them up only at the highest level.

4. Customer Equity and Financial Accountability

4.1 Financial Accountability

Financial accountability is key to a firm's success. Spending without any regard to financial consequences can be disastrous and sound the death knell for the firm. Even if the firm's spending is not enough to put the company out of business, the pressures of financial accountability can still be severe; for example there could be shareholder pressure to keep spending in check. Another more important but less salient reason for the increasing importance of financial accountability is that advances in information technology are making it easier to collect, maintain and analyze the information required to evaluate financial accountability. Increases in computer storage capacity coupled with improvements in computation time result in an environment in which companies have an unprecedented ability to collect and analyze profitability data. Ultimately the ability to make the firm's improvement efforts financially accountable becomes a requirement for survival.

In spite of pre-existing techniques to evaluate the financial return from particular marketing expenditures such as advertising, direct mailings, sales promotion (see Berger et al., 2002), these techniques have not produced a higher level model that can be used to trade-off marketing strategies in general. The requirement of a lengthy history of longitudinal data has made the application of return on investment models rare in marketing. As a result, marketing expenditures are typically viewed as short term costs, rather than long term investments, and as financially unaccountable (Schulz and Gronstedt, 1997). Rust, Lemon and Zeithaml (2004) propose that firms can achieve this financial accountability by considering the effect of strategic marketing expenditures and by relating the improvements in customer equity to the expenditure required to achieve it.

4.2 Mechanism of Linking Marketing Actions to Financial Return

Having established the need for financial accountability, we will now commence the task of illustrating a model that would help a manager make the marketing decisions financially accountable. We summarize the model that was first proposed by Rust, Lemon and Zeithaml (2004) as a means to measure the returns from various marketing activities.

Marketing initiatives are viewed as investments (Srivastava, Shervani and Fahey, 1998) that bring forth an improvement in customer equity and thereby in drivers of customer equity (Simester et al., 2000), which lead to increased customer perceptions and increased attraction and retention of customers (Danaher and Rust, 1996). Better attraction and retention consequently lead to increased customer lifetime value (Berger and Nasr, 1998) and customer equity (Blattberg and Deighton, 1996). The increase in customer equity in relation to the cost of marketing investment, results in a return on marketing

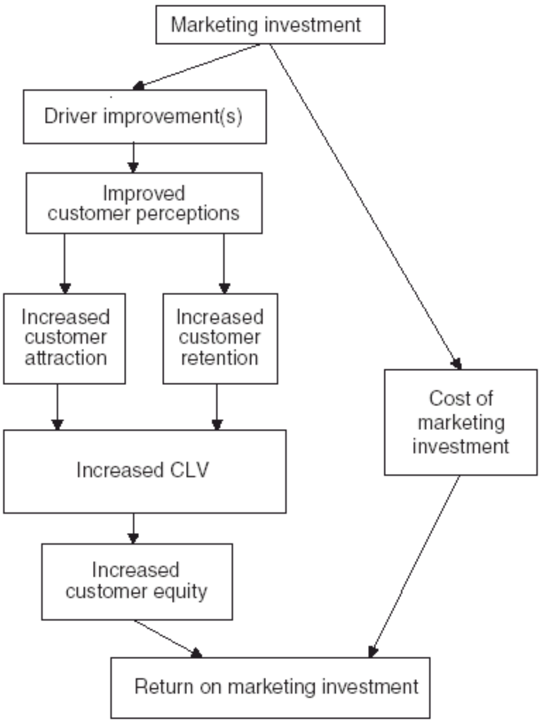

Figure 2 Return on Marketing

investment. The above procedure is summarized in figure 2, adapted from Rust, Lemon and Zeithaml (2004).

As stated previously, competing brands form a crucial element of brand choice. Therefore it is necessary to explicitly consider the relationship between the focal brand and the competitor's brands. This allows the creation of models that contain both customer attraction and retention in the context of brand switching. The main advantage is that competitive effects can be modeled, thereby yielding a more accurate account of CLV and customer equity.

Customer retention has been treated according to two assumptions: the 'lost for good assumption' or customer retention probability, and the 'always a share assumption' or migration model. The migration model assigns a retention probability. If a customer missed a period, a lower probability is assigned to allow for the possibility that the customer may return. Rust, Lemon and Zeithaml (2004) model this scenario using a Markov switching matrix approach.

Both, the acquisition and retention of customers are modeled by the brand switching matrix. Acquisition is modeled by the flow of customers from competing firms to the focal firm. The diagonal element of the brand switching matrix associated with the focal firm represents the retention of the customer. A particular customer's retention probability is the focal firm's diagonal element (in the brand switching matrix), as a proportion of the sum of the probabilities in the focal firm's row of the switching matrix. Thus the retention rate for each customer-firm combination is dissimilar. The above mentioned procedure describes the acquisition of customers who are already in the market, however in growing markets acquisition of customers who are new to the market must also be modeled.

Rust, Lemon and Zeithaml (2004) model customer retention, defection and possible return through a general approach that uses a Markov switching matrix. In the model, the retention probability represents the probability that a customer is retained by the brand in the subsequent period or purchase occasion. Retention probabilities for all brands are included in the Markov matrix. The matrix also models the customer's probability of switching from any brand to any other brand. Therefore customers are allowed to leave and then return.

The Markov matrix thus generalizes the migration model and expands to include the perspective of multiple brands.

The authors also explain the concept of 'the bridge of actionability,' which essentially is the bridge between management-identified processes and customer-identified sub-processes. Linking the voice of the customer to a procedure that explains how management provides service to the customer furnishes the bridge needed to make the customer needs crucial to management action. The authors assume that the firm can identify drivers (e.g., advertising, price, loyalty programs) that influence consumer decision making and that compete for resources in the firm. The authors also assume that the firm would trade-off the drivers to make decisions about which strategic investments yield the greatest payoff (Johnson and Gustafsson, 2000).The drivers projected to yield the highest return will thus receive the highest level of investment. It is necessary to connect the drivers to customer perceptions so as to measure the effects of marketing actions at the individual customer level. Therefore, it is necessary to have customer ratings on the brand's perceived performance on each driver (e.g., Likert scales).

Thus, modeling the customer's lifetime value requires modeling the switching matrix for each individual consumer. We provide a brief summary of the model proposed by Rust, Lemon and Zeithaml (2004) below.

The authors use a cross-sectional sample of customers to employ individual-specific customer equity driver ratings. The authors also include the effect of brand inertia (extensively used in multinomial logit models, Guadagni and Little, 1983). The authors hypothesize the utility model as:

$$Utility = inertia + impact\ of\ drivers \qquad (1)$$

If we assume 'U_{ijk}' is the utility of brand k to individual i, who most recently purchased brand j and '$LAST_{ijk}$' is a dummy variable that is equal to one if $j = k$ and is equal to zero otherwise and 'X' is a row vector of drivers then the utility equation can be written as follows:

$$U_{ijk} = \beta_{0k} LAST_{ijk} + X_{ik}\beta_{1k} + \varepsilon_{ijk} \qquad (2),$$

where the coefficient β_{0k} (logit regression coefficient) corresponds to the brand inertia, β_{1k} is a column vector consisting of logit regression coefficients corresponding to the drivers, and ε_{ijk} is a random error term that is assumed to have an extreme value (double exponential/Gumbel) type of distribution. The β coefficients can be either homogenous or heterogeneous across consumers. The model is thus flexible and can also be estimated separately for dissimilar market segments.

As the authors consider individual-level utilities, individual level switching matrices are obtained. Different assumptions are made about the most recent brands purchased in each row of the switching matrix. Therefore different rows have different utilities, i.e. the first row assumes the first brand was bought recently and so on. The utilities in different rows are different, as the effect of inertia is present only in the repeat purchases. The probability of choice for individual i is modeled as:

P_{ijk*} = Pr[individual i chooses brand $k*$, given that brand j was most recently chosen]

$$= exp(V_{ijk*}) \big/ \sum exp(V_{ijk}) \qquad (3)$$

where V_{ijk} is the deterministic component of utility (the right side of equation (2), omitting the error term).

Thus, the individual-level switching matrices obtained from individual-level utilities; result in an individual-level CLV. Each customer i has an associated $J \times J$ switching matrix, where J is the number of brands, in order to make the CLV calculation more individualistic. The switching probabilities are denoted by p_{ijk}, i.e., the probability that customer i will select brand k in the next purchase, conditional on having purchased brand j in the most recent purchase. M_i denotes the Markov switching matrix. A_i is a $1 \times J$ row vector that has the probabilities of purchase for customer i's current transaction as its components. The firm's discount rate is represented by d_j. The frequency of purchase or customer i's average purchase rate per unit time is represented by f_i (e.g., four purchases per year). The customers expected purchase volume of when purchasing brand j in purchase t is denoted by v_{ijt}. The consumer's volume per purchase is assumed to be exogenous. The expected contribution margin per unit of firm j from customer i in purchase t is given by π_{ijt}. Finally B_{it} is a $1 \times J$ row vector with elements B_{ijt}. B_{it} is the probability that customer i buys brand j in purchase t, and is calculated by multiplying by the Markov matrix t times:

$$B_{it} = A_i M_i^t. \qquad (4)$$

The lifetime value, CLV_{ij}, of customer i to brand j is

$$CLV_{ij} = \sum_{t=0}^{T_{ij}} (1+d_j)^{-\frac{t}{f_i}} v_{ijt} \pi_{ijt} B_{ijt}, \qquad (5)$$

where the number of purchases customer i is expected to make before firm j's time horizon H_j (e.g., a typical time horizon ranges from three to five years) is given by T_{ij}, and B_{ijt} is a firm specific element of B_{it}. Therefore, T_i = int[$H_j f_i$], where int[.] is the integer part. Firm j's customer equity, CE_j, can be estimated as

$$CE_j = mean_i(CLV_{ij}) \times POP \qquad (6)$$

where the average lifetime value for firm j's customers i across the sample is represented by mean$_i$(CLV_{ij}), and the total number of customers in the market across all brands is given by *POP*. The *CLV* is then calculated separately for each individual customer in the sample before the average is taken. More discounting is appropriate for purchase t if purchasing is infrequent (because purchase t will occur further into the future).This is reflected in the exponent $-t/f_i$. The authors then derive the overall measure of the company's competitive standing using the customer equity framework. The authors define a customer equity share (*CES*), which takes the customer lifetime value into account. The authors calculate customer equity share as

$$CES_j = CE_j / \sum_k CE_k \qquad (7)$$

The firm's final objective is to estimate the financial impact that will result from various marketing actions. Improvements in the drivers may lead to an improvement in the firm's customer equity. *A* shift in a driver produces a shift in utility, results in a revised Markov switching matrix by producing a shift in the conditional probabilities of choice, leading to improved customer lifetime value. The improved *CLV* when summed across all customers results in improved customer equity. The authors argue that if the discounted expenditure stream (denoted by *E*) is discounted by the cost of capital and if ΔCE is the improvement in customer equity produced by the expenditures, then the return on investment (ROI) is calculated as:

$$ROI = (\Delta CE\text{-}E)/E \qquad (8)$$

Thus the authors provide a procedure by which it is possible to make marketing strategy financially accountable. They illustrate their approach with data collected from consumers across five industries, namely airlines, electronics stores, facial tissues, grocery and rental cars. For issues dealing with the implementation of the model and applications to these industries the reader is advised to refer the Rust, Lemon and Zeithaml (2004) article.

5. Discussions and Conclusions

5.1 Main Contributions

The main contribution of this article was to provide a summary of the current literature on customer equity and also present an overview of the state of the art procedures used to make marketing strategy financially accountable. Traditionally, Return on Investment (ROI) models have been used to evaluate the financial expenditures required by the strategies as well as the financial returns gained by them. However in addition to requiring lengthy longitudinal data, these models also have the disadvantage of not evaluating the effect of the strategies on a firm’s customer equity. The dominance of customer-centered thinking over product-centered thinking, calls for a shift from product-based strategies to customer-based strategies. Hence, it is important to evaluate a firm’s marketing strategies in terms of the drivers of its customer equity. The article summarizes a unified strategic framework that enables competing marketing strategy options to be traded off on the basis of projected financial return, which is operationalized as the change in a firm’s customer equity relative to the incremental expenditure necessary to produce the change.

5.2 Directions for Future Research

Areas for future research, include examining the effects of market dynamics on customer equity, cross-selling between a multi-product firm’s brands or products, varying the customer’s volume per purchase, attempt to relate customer equity to corporate evaluation (Gupta and Lehmann, 2003 and Gupta, Lehmann and Stewart, 2001 provide a framework to achieve this) and also attempt to incorporate competitive reactions and not just competition. Another interesting avenue for future research would be to develop dynamic models of customer equity and customer lifetime value, so as to achieve a deeper understanding of consumer behavior.

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